

About.com: Mathematics

Advertisement

Kaprekar's Constant

By [Deb Russell](#), About.com Guide

Free Mathematics Newsletter!



[Discuss](#) in my Forum

See More About: [algebra worksheets](#) [pre algebra worksheets](#) [integers](#) [integer rules](#)

Shri Dattathreya Ramachandra Kaprekar was born on January 17, 1905 in Dahanu which is near Mumbai, India. Recreational math became his hobby as a child he enjoyed spending time solving math puzzles and problems. In 1946 he discovered Kaprekar's Constant which was named after him. The Constant is 6174. Here's how it works:

1. You can take any four-digit number and re-arrange the digits in decreasing order. All digits MUST be different. We'll use 4521 - let's order the digits from highest to lowest which gives us 5421.
2. Now take the number and order the digits from lowest to highest and subtract from the number you ordered from high to low. (Repeat the process until you come to the Constant of 6174)

Original number: 4521

$$5421 - 1245 = 4176$$

$$7641 - 1467 = 6174$$

After going through the process twice, we reach 6174. Try another 4 digit number:

9472

$$9742 - 2479 = 7263$$

$$7632 - 2367 = 5265$$

$$6552 - 2556 = 3996$$

$$9963 - 3699 = 6264$$

$$6642 - 2466 = 4176$$

$$7641 - 1467 = 6174$$

What happens when you keep repeating the process?

What did you notice when you end up getting 2 digits that are the same through the process?

Can you find a number that requires the greatest amount of subtractions?

What happens if you try this on a 3 digit number?

Explore Mathematics

See More About:

- [algebra worksheets](#)
- [pre algebra worksheets](#)
- [integers](#)
- [integer rules](#)

By Category

- [Math Help and Tutorials](#)
- [Math Formulas](#)
- [Math Lesson Plans](#)
- [Arithmetic](#)
- [Glossary of Terms](#)
- [Math Stumpers](#)
- [Calculators](#)
- [Math Worksheets](#)
- [Mathematicians](#)
- [Books, Resources, DVDs](#)
- [Recreational Math](#)

Must Reads

- [Grade by Grade Goals](#)
- [What is Compound Interest?](#)
- [Multiplication Tricks/Resources](#)
- [Find Area, Perimeter & Volume](#)
- [Graph Paper](#)

Most Popular

- [Worksheets in PDF and Word](#)
- [Area and Surface Formulas](#)
- [The Basics](#)
- [Surface Area & Volume Formulas](#)
- [Grade 1 Math Worksheets](#)